

REMARKS

I. INTRODUCTION

Claims 1, 15, 16, 18, 24, and 25 have been amended. No new matter has been added. Thus, claims 1-18 and 20-27 remain pending in the present application. In light of the above amendments and the following remarks, Applicants respectfully submit that all presently pending claims are in condition for allowance.

Support for the amendments to claims 1 and 18 can be found at least at paragraphs [0006], [0038] – [0040] of the published application. The Applicants note that the amendments to claims 15, 16, 24, and 25 were made for non-statutory reasons, specifically to correct spelling.

II. THE DOUBLE PATENTING REJECTION IS ACKNOWLEDGED

Claims 1-18 and 20-27 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 and 20-28 of copending Application No. 10/574,141 and claims 1-22 and 24-35 of copending Application No. 10/574,140. The Applicants acknowledge this provisional rejection and will address the rejection if the claims of the applications are deemed allowable and remain subject of a non-provisional double patenting rejection.

III. THE 35 U.S.C. § 103(a) REJECTIONS SHOULD BE WITHDRAWN

Claims 1-13, 22, 24-26, and 35 stand rejected under 35 U.S.C. §103(a) as unpatentable over Balogh (U.S. Published App. No. 2001/0028356) in view of Andrade et al. (U.S. Patent No. 6,954,193).

Claim 1, as amended, recites, “[a] display device for displaying a three dimensional image such that different views are displayed according to different viewing angles, the display device including: a display panel having a plurality of separately addressable pixels for displaying said image, the pixels being grouped into a plurality of

groups with each group including a plurality of pixels, each pixel in the group corresponding to one of a plurality of different views of the image as a function of an angle with respect to a first axis; a display driver for controlling an optical characteristic of each pixel to generate a grey scale image according to received image data; and a grey scale compensation device for further controlling light transmission characteristics of a plurality of pixels within a group to compensate for a predetermined viewing angle dependency of said optical characteristic in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is different.”

The Examiner correctly admits that Balogh fails to teach the recited grey scale compensation device. (*See*, 9/21/10 Office Action, p.5). However, the Examiner cites Andrade to cure this deficiency. (*See, Id.* at p. 5). The Applicants have previously argued that Andrade was limited to 2D displays and thus was not applicable to the recited 3D display. (*See*, 8/23/10 Response, pp. 3-4). In response to this argument, the Examiner admitted that Andrade is “applied to a two-dimensional display,” but stated that it could “apply to a three-dimensional display as well.” (*See*, 9/21/10 Office Action, pp.12-13). Specifically, the Examiner asserted that “the method taught by Andrade et al. can be applied to any display data, regardless of what type of display it is being transmitted to, because the correction curves stored in the display can be generated to the specifications of the individual display incorporating the color compensation device.” (*See, Id.* at p. 13). The Applicants respectfully disagree.

Initially, claim 1 has been amended to clarify that the “pixels [are] grouped into a plurality of groups with each group including a plurality of pixels, each pixel in the group corresponding to one of a plurality of different views of the image as a function of an angle with respect to a first axis.” Thus, each pixel in a particular group corresponds to one of multiple viewing angles. This is not the case for the 2D display described by Andrade. Applicants fully understand that the Examiner did not use Andrade to teach this element of the claim. However, Applicants believe it is necessary to describe the

differences between 2D and 3D displays to explain why the 2D correction taught by Andrade is not applicable to the recited 3D display.

Those skilled in the art will understand that in a 2D display, such as the one described in Andrade, each of the pixels sends its information in all directions. That is, a pixel in a 2D display is not limited to a viewing angle, but viewers at any angle will see the same pixel. Thus, correcting any one pixel of a 2D display for a particular viewing angle will necessarily result in that pixel having a less than optimal viewing characteristic at other viewing angles. This is why Andrade generally requires sensor input to determine the location of a viewer. For example, Andrade states that the sensors include “a display orientation sensor, a viewing position sensor, or a viewer feature tracking sensor.” (See, Andrade, col. 5, lines 35-37). Andrade provides numerous examples of sensor inputs for determining the angle where a viewer is watching the display and/or the orientation of the display. (See e.g., *Id.*, at col. 8, lines 18-28; and col. 9, lines 31-35). Andrade does state that pixel level correction may be provided without sensor input, but this is based upon “average value assumptions associated with viewing positions, display orientation, and the like.” (See, *Id.*, at col. 8, lines 29-35). Thus, even though sensor inputs are not required, Andrade still requires that there be values for these parameters in order to determine the pixel correction. This is because Andrade is correcting pixels on a 2D display for a single viewer or based on a single orientation of the display. A second viewer viewing the same pixels from a different angle would not have the benefit of a corrected image.

As described above, in the recited 3D display, viewers at different viewing angles are not seeing the same pixels, they are seeing the pixels that correspond to the viewing angle at which they are viewing the display. Thus, if one were to apply the correction described by Andrade to all the pixels in a group, the correction would be improper because the Andrade method assumes that the correction for all the pixels is for the same viewing angle.

In contrast, claim 1 has been amended to recite that a “grey scale compensation device for further controlling light transmission characteristics of a plurality of pixels within a group to compensate for a predetermined viewing angle dependency of said optical characteristic in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is different.” Thus, Applicants have clarified that the compensation is applied to “a plurality of pixels within a group.” This is to address the Examiner’s contention that “[c]laim 1 does not specify that more than one viewer from one location is viewing the display at one time, and that the color compensation device completely corrects any and all viewing angle dependencies for any and all viewers located at any and all locations around the display.” (*See*, 9/21/10 Office Action, p.13). The above amended claim language makes it clear that multiple pixels from a single group are corrected, and, as explained above, each pixel of a group is directed to an individual viewing angle. Therefore, the correction is applied to multiple viewing angles for the 3D display. Such correction is neither disclosed nor suggested by Andrade because, as described above, the correction of Andrade is only applied to a single viewing angle because it is a 2D display. Furthermore, claim 1 has also been amended to recite “wherein a correction applied to each of the plurality of pixels within the group is different.” This further recognizes that since each pixel in a group is directed at a different viewing angle and therefore needs a different correction.

Therefore, Applicants respectfully submit that neither Balogh nor Andrade disclose or suggest “a grey scale compensation device for further controlling light transmission characteristics of a plurality of pixels within a group to compensate for a predetermined viewing angle dependency of said optical characteristic in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is different” as recited in claim 1. Accordingly, the rejection of claim 1 should be withdrawn. Because claims 2-14 depend on and, therefore, contain all of the limitations of claim 1, it is respectfully submitted that the rejections of these claims should also be withdrawn..

Claim 18 recites, *inter alia*, “applying grey scale correction values to a plurality of pixel data values within each group to compensate for a predetermined viewing angle dependency of an optical characteristic in a second axis of the display panel, wherein the second axis is transverse to the first axis, by controlling an amount passing through each pixel according to a three dimensional grey scale image to be displayed, wherein the grey scale correction values applied to each of the plurality of pixels within the group are different.” Thus it is respectfully submitted that the rejections of claim 18 and its dependent claims 20-23 and 27 should be withdrawn for at least the foregoing reasons presented with regards to claim 1.

Claims 15-17 and 24-26 stand rejected under 35 U.S.C. §103(a) as unpatentable over Balogh in view of Andrade and further in view of Mochizuki (U.S. Patent No. 6,386,720).

Applicants respectfully submit that Mochizuku fails to cure the deficiencies of Balogh and Andrade and that Balogh, Andrade, and Mochizuku, taken alone or in any combination, fail to disclose or suggest the limitations of claims 1 and 18. Because claims 15-17 depend on and, therefore, contain all of the limitations of claim 1, it is respectfully submitted that these claims are allowable. Because claims 24-26 depend on and, therefore, contain all of the limitations of claim 18, it is respectfully submitted that these claims are allowable.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application are believed to be in condition for allowance. If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to contact the undersigned.

Respectfully Submitted,

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